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10/500,472	07/15/2004	Kenji Kimura	P25659	7889
7055	7590	10/30/2008		
GREENBLUM & BERNSTEIN, P.L.C. 1950 ROLAND CLARKE PLACE RESTON, VA 20191				EXAMINER
				LEE, CYNTHIA K
ART UNIT		PAPER NUMBER		
		1795		
NOTIFICATION DATE		DELIVERY MODE		
10/30/2008		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

gbpatent@gbpatent.com  
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<b>Office Action Summary</b>	<b>Application No.</b> 10/500,472	<b>Applicant(s)</b> KIMURA ET AL.
	<b>Examiner</b> CYNTHIA LEE	<b>Art Unit</b> 1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 06 August 2008.

2a) This action is FINAL.      2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-19 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-19 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_

4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_

5) Notice of Informal Patent Application  
6) Other: \_\_\_\_\_

***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/6/2008 has been entered.

***Response to Amendment***

This Office Action is responsive to the amendment filed on 7/7/2008. Claims 1-19 are pending.

Applicant's arguments have been considered. Claims 1-19 are non-finally rejected for reasons stated herein below.

The Objection to the drawings has been withdrawn.

The 35 USC 12, 1<sup>st</sup> rejection has been withdrawn.

***Specification***

The amendment filed 12/12/2007 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

The amended Specification submitted on 12/12/2007 inserting the term "swaged" is not supported by the Foreign priority as asserted by the Applicants. The Examiner

provides two independent translations of the portion of Applicant's foreign priority being relied upon. See attached.

Applicant is required to cancel the new matter in the reply to this Office Action.

Applicant's arguments have been considered. However, Applicant has not provided evidentiary support as to why "swaging" is a better translation than "caulking." The rejection is maintained.

#### ***Claims Analysis***

The limitation "a hole configured to receive the electrolyte into the battery" has been considered but was not given patentable weight because it is not present in the final product. The Specification pg 13 lines 6-7 states that "the hole 9 is tightly sealed with the sealing means 10 to complete the battery 1."

#### ***Claim Rejections - 35 USC § 102/103***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 4, and 13-15 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Terashi (JP 2000-340210).

All references refer to Fig. 1. Terashi discloses a battery comprising: an electrode assembly comprising a positive electrode plate (21) and a negative electrode plate (23), and a separator (22) wound or laminated together, core materials of the positive and negative electrode plates being bared respectively at ends of the electrode assembly (5); a cylindrical outer case having a bottom being connected to either end face of the electrode assembly to serve as a battery terminal (1); and a lid connected to the other end face of the electrode assembly and attached to the outer case with a sealer and an insulator interposed therebetween (12); and a safety structure that releases gas in response to a build-up of internal pressure (14).

Regarding claim 4, the lid is provided with a projection protruding to the inside of the outer case, and is welded to the bared portion of the core material of the electrode plate of the electrode assembly with the projection making tight contact therewith [0017].

Regarding claim 13, the Examiner notes that the lid on which the valve rests has a cut. It is necessarily continuous or discontinuous. See fig. 1.

Regarding claim 14, a current collector plate is welded to the bared portion of the core material of one of the electrode plates of the electrode assembly, and after placing the electrode assembly in the outer case, the current collector plate is welded to the bottom of the outer case [0018].

Regarding claim 15, the outer case is provided with an inwardly protruding projection, which is welded to the bared portion of the core material of the electrode plate of the electrode assembly in the outer case in tight contact therewith (15 in fig. 1).

Terashi does not expressly disclose an electrolyte being impregnated in the electrode assembly (claim 2). However, the Examiner notes that a battery necessarily contains an electrolyte that conducts ions generated in the electrochemical reaction inside the battery can. Should it not be anticipatory, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the battery of Terashi with an electrolyte for the benefit of conducting metal ions to make the battery functional.

Regarding the limitation "cylindrical portion" (Applicant's claim 19), Marukawa's connector 7 has a cylindrical portion shaped to receive and connect to the bottom of another battery.

Regarding the limitation "the lid contacts and is welded to the bared portion of the core material of one of the electrode plates of the electrode assembly," it is noted that the sealing plate 11 (or Applicant's lid) is welded to the current collection member 4 (which comprises the tab section 42 and monotonous section 43) [0017]. The current collection member 4 is welded to the current collection section 5 [0017]. It is further noted that the current collection section 5 is welded to one edge of an electrode 2. Thus, it is noted that the sealing plate 11 is welded to the electrode plate 2.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 6-8, 10, 11, 17, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terashi (JP 2000-340210) in view of Marukawa (US 5900332).

All references refer to Fig. 1. Terashi discloses a battery comprising: an electrode assembly comprising a positive electrode plate (21) and a negative electrode plate (23), and a separator (22) wound or laminated together, core materials of the positive and negative electrode plates being bared respectively at either end; a cylindrical outer case having a bottom being connected to either end face of the electrode assembly to serve as a battery terminal (1); and a lid connected to the other end face of the electrode assembly and attached to the outer case with a sealer and an insulator interposed therebetween (12); and a safety structure that releases gas in response to a build-up of internal pressure (14).

Terashi does not expressly disclose an electrolyte being impregnated in the electrode assembly. However, the Examiner notes that a battery necessarily contains an electrolyte that conducts ions generated in the electrochemical reaction inside the battery can. Should it not be anticipatory, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the battery of

Terashi with an electrolyte for the benefit of conducting metal ions to make the battery functional.

Terashi does not disclose wherein the lid includes a connecting part in one piece therewith that engages with and connects a bottom part of the outer case of another battery to be connected (claim 1). Marukawa teaches a lid includes a connecting part in one piece therewith that engages with and connects a bottom part of the outer case of another battery to be connected (1 in fig. 1). Regarding applicant's claims 10 and 17, bottom of the outer case of one battery being fitted into the connecting part of the lid of the other battery and their mating parts being welded together (Marukawa 4:65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to add a connecting piece of Marukawa to the battery of Terashi for the benefit of connecting two adjacent batteries stably. It is noted that Marukawa's connector 7 and the metal electrode are interpreted as being "one piece" or "unitary." Further, it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stoves Works*, 150 U.S. 164 (1893).

Regarding claim 3, the lid is welded to the bared portion of the core material of one of the electrode plates of the electrode assembly to serve as a current collector plate [0017].

Regarding claim 6, the Examiner notes that the lid on which the valve rests has a cut. It is necessarily continuous or discontinuous. See fig. 1.

Regarding claim 7, a current collector plate is welded to the bared portion of the core material of one of the electrode plates of the electrode assembly, and after placing the electrode assembly in the outer case, the current collector plate is welded to the bottom of the outer case [0018].

Regarding claim 8, the outer case is provided with an inwardly protruding projection, which is welded to the bared portion of the core material of the electrode plate of the electrode assembly in the outer case in tight contact therewith (15 in fig. 1).

Regarding claim 11, the lid is provided with a projection protruding to the inside of the outer case, and is welded to the bared portion of the core material of the electrode plate of the electrode assembly with the projection making tight contact therewith [0017].

Regarding the limitation "cylindrical portion" (Applicant's claim 18), Marukawa's connector 7 has a cylindrical portion shaped to receive and connect to the bottom of another battery.

Regarding the limitation "the lid contacts and is welded to the bared portion of the core material of one of the electrode plates of the electrode assembly," it is noted that the sealing plate 11 (or Applicant's lid) is welded to the current collection member 4 (which comprises the tab section 42 and monotonous section 43) [0017]. The current collection member 4 is welded to the current collection section 5 [0017]. It is further noted that the current collection section 5 is welded to one edge of an electrode 2. Thus, it is noted that the sealing plate 11 is welded to the electrode plate 2.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Terashi (JP 2000-340210) in view of Marukawa (US 5900332) as applied to claim 1 above, and further in view of Ikoma (US 5663007).

Terashi modified by Marukawa discloses a cylindrical portion with a gasket interposed therebetween, but does not disclose the outer case and the cylindrical portion of the lid joined by a fixing groove formed by swaging.

Ikoma discloses of crimping a metal casing and a lid having a safely vent in conventional batteries (2:20-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to mechanically join the lid with the outer casing in addition to the sealing gasket for the benefit of making the gasket tighter between the can and the lid.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Terashi (JP 2000-340210) as applied to claim 2 above, in view of Ikoma (US 5663007).

Terashi modified by Marukawa discloses a cylindrical portion with a gasket interposed therebetween, but does not disclose the outer case and the cylindrical portion of the lid joined by a fixing groove formed by swaging.

Ikoma discloses of crimping a metal casing and a lid having a safely vent in conventional batteries (2:20-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to mechanically join the lid with the outer

casing in addition to the sealing gasket for the benefit of making the gasket tighter between the can and the lid.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Terashi (JP 2000-340210) in view of Marukawa (US 5900332) as applied to claim 1 above, and further in view of Tucholski (US 2002/0031705) and the definition of "clad" (from The American Heritage Dictionary retrieved from <http://www.credoreference.com/entry/4073723>, on Aug 28, 2007).

Terashi modified by Marukawa does not disclose that the lid comprises a clad plate consisting of a plate material that is resistant to the electrolyte on a side facing the outer case. Tucholski teaches that the inner surface of cover 445, as well as the peripheral portion of the upper surface of cover 445, is coated with a layer 475 of electrical insulation material, such as an epoxy, nylon, Teflon.RTM., or vinyl. Additionally, the inner and outer surfaces of can 412 are also coated in the region of the open end of can 412. Such coatings 475 may be applied directly to the can and cover by spraying, dipping, or electrostatic deposition. By providing such a coating, negative outer cover 445 may be electrically insulated from can 412 [0097]. By applying the insulation coating to the areas of the can, cover, and collector nail within the battery that are proximate the void area within the battery's internal volume, those areas may be protected from corrosion. While a coating consisting of a single layer of the epoxy, nylon, Teflon.RTM., or vinyl materials noted above will function to prevent

such corrosion, it is conceivable that the coating may be applied using layers of two different materials or made of single layers of different materials applied to different regions of the components. For example, the peripheral region of the cover may be coated with a single layer of material that functions both as an electrical insulator and an anti-corrosion layer, while the central portion on the inner surface of the cover may be coated with a single layer of a material that functions as an anti-corrosion layer but does not also function as an electrical insulator. Such materials may include, for example, asphalt or polyamide [0098]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to coat the inner face of the can with an anti-corrosion layer for the benefit of making the lid corrosion resistant and thus, increasing the service life of the battery.

The Examiner has taken the definition of "clad" to mean: to cover with a protective or insulating layer of other material, from The American Heritage Dictionary. Thus, the anti-corrosion resistant layer of Tucholski reads on the Applicant's "clad plate."

clad<sup>1</sup>

◊ pronunciation

*tr.v.* **clad**, **clad-ding**, **clads**.

1. To sheathe or cover (a metal) with a metal.
2. To cover with a protective or insulating layer of other material.  
[Back-formation from cladding.]

[APA](#) | [MLA](#) | [Chicago](#) : [Citing this entry](#)  
clad 1 (2003). In *The American Heritage® Dictionary of the English Language*. Retrieved August 28, 2007, from <http://www.credoreference.com/entry/4073723>

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Terashi (JP 2000-340210) as applied to claim 2 above, in view of Marukawa (US 5900332), Tucholski (US 2002/0031705), and the definition of "clad" (from The American Heritage Dictionary retrieved from <http://www.credoreference.com/entry/4073723>, on Aug 28, 2007).

Terashi modified by Marukawa does not disclose that the lid comprises a clad plate consisting of a plate material that is resistant to the electrolyte on a side facing the outer case. Tucholski teaches that the inner surface of cover 445, as well as the peripheral portion of the upper surface of cover 445, is coated with a layer 475 of electrical insulation material, such as an epoxy, nylon, Teflon.RTM., or vinyl. Additionally, the inner and outer surfaces of can 412 are also coated in the region of the open end of can 412. Such coatings 475 may be applied directly to the can and cover by spraying, dipping, or electrostatic deposition. By providing such a coating, negative outer cover 445 may be electrically insulated from can 412 [0097]. By applying the insulation coating to the areas of the can, cover, and collector nail within the battery that are proximate the void area within the battery's internal volume, those areas may be protected from corrosion. While a coating consisting of a single layer of the epoxy, nylon, Teflon.RTM., or vinyl materials noted above will function to prevent such corrosion, it is conceivable that the coating may be applied using layers of two

different materials or made of single layers of different materials applied to different regions of the components. For example, the peripheral region of the cover may be coated with a single layer of material that functions both as an electrical insulator and an anti-corrosion layer, while the central portion on the inner surface of the cover may be coated with a single layer of a material that functions as an anti-corrosion layer but does not also function as an electrical insulator. Such materials may include, for example, asphalt or polyamide [0098]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to coat the inner face of the can with an anti-corrosion layer for the benefit of making the lid corrosion resistant and thus, increasing the service life of the battery.

The Examiner has taken the definition of "clad" to mean: to cover with a protective or insulating layer of other material, from The American Heritage Dictionary. Thus, the anti-corrosion resistant layer of Tucholski reads on the Applicant's "clad plate."

## clad<sup>1</sup>

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 [pronunciation](#)  
tr.v. **clad**, **clad·ding**, **clads**.

1. To sheathe or cover (a metal) with a metal.
2. To cover with a protective or insulating layer of other material.  
[Back-formation from cladding.]

*The American Heritage Dictionary of the English Language, © Houghton Mifflin Company 2003* 

***Response to Arguments***

Applicant's arguments filed 7/7/2008 have been fully considered but they are not persuasive.

*Applicant asserts that the lid 11 does not contact an electrode and is not welded directly to the electrode plates 2 (emphasis in original).*

It is noted that the claims do not require that the lid be in "direct" contact with the electrode plates or be welded "directly" to the electrode plates..

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Lee whose telephone number is 571-272-8699. The examiner can normally be reached on Monday-Friday 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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